

REMARKS

In the Office Action dated July 31, 2003, the Examiner (A) rejected claims 22-27 under 35 U.S.C. § 102(e); (B) rejected claims 28-48 under 35 U.S.C. § 103(a); and (C) rejected claim 22 under the judicially created doctrine of obviousness-type double patenting. Applicants have amended claim 22. No new matter has been added.

Applicants submit that that claims 22-48 are currently in condition for allowance. Therefore, Applicants request that the Examiner enter this amendment and issue a Notice of Allowance.

A. Response to the 35 U.S.C. § 102(b) Rejection

Claims 22-27 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,964,952 ("Kunze-Concewitz"). Claim 22 has been amended to clarify that the gaseous substance is at least partially miscible with the liquid, and when mixed with the liquid, the mixture has a surface tension lower than that of the liquid, which inhibits the liquid from contacting the second part of the substrate.

In claim 22, Applicants recite an apparatus for subjecting a substrate to a localized liquid treatment for cleaning or etching the substrate. The apparatus includes a means for holding the substrate, a first supply system, and a second supply system. The first supply system is adapted to supply a liquid on a first part of the substrate, while the second supply system is adapted to supply a gaseous substance to the second part of the substrate. The second part of the substrate is adjacent to the first part of the substrate. The gaseous substance is at least partially miscible with the liquid, and when mixed with the liquid, the mixture has a surface tension lower than the liquid, which inhibits

the liquid from contacting the second part of the substrate. Thus, the liquid is contained in a local zone of the substrate surface. (See, e.g., Applicants' Specification, Abstract.)

Kunze-Concewitz teaches a method and device for cleaning contaminated surfaces with both water and steam. (See, e.g., Kunze-Concewitz, Abstract.) Water is sprayed on the substrate surface creating a water film. (See, e.g., Kunze-Concewitz, column 6, lines 46-61.) Steam is then sprayed directly into the water film, causing vapor bubbles to be formed in the water film. The vapor bubbles loosen or detach particles on the substrate surface, which are then carried away in the outflowing water film.

In contrast to Applicants' claim 22, Kunze-Concewitz teaches the water and steam being applied to the same part of a substrate surface. Further, Kunze-Concewitz does not teach that the mixture of the water and the steam has a surface tension lower than that of the water alone. Further still, the water and steam mixture does not inhibit the water from contacting part of the substrate. Because Kunze-Concewitz does not teach at least that the gaseous substance is at least partially miscible with the liquid, and when mixed with the liquid, the mixture has a surface tension lower than the liquid, which inhibits the liquid from contacting the second part of the substrate, Kunze-Concewitz does not teach each and every element of claim 22. Thus, Applicants submit that Kunze-Concewitz does not anticipate claim 22.

Claims 23-27 depend from Claim 22. Accordingly, Applicants also submit that Kunze-Concewitz does not anticipate Claims 23-27.

In light of the above, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 102(b).

B. Response to the 35 U.S.C. § 103(a) Rejection

Claims 28-48 were rejected under 35 U.S.C. § 103(a) as being obvious in light of the combination of Kunze-Concewitz and U.S. Patent No. 5,749,413 ("Crowe"). Claims 28-48 depend from claim 22. As described above, Kunze-Concewitz does not teach that the gaseous substance is at least partially miscible with the liquid, and when mixed with the liquid, the mixture has a surface tension lower than the liquid, which inhibits the liquid from contacting the second part of the substrate. Crowe fails to overcome this deficiency in Kunze-Concewitz.

Crowe teaches a power electronics package that includes a heat exchanger. (See e.g., Crowe, Abstract.) Crowe does not discuss wafer cleaning or liquid removal from a substrate. Thus, Crowe does not teach that the gaseous substance is at least partially miscible with the liquid, and when mixed with the liquid, the mixture has a surface tension lower than the liquid, which inhibits the liquid from contacting the second part of the substrate. Accordingly, Applicants submit that claims 28-48 are not obvious in light of the combination of Kunze-Concewitz and Crowe.

In light of the above, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103(a).

C. Response to the Double Patenting Rejection

Claim 22 was rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,334,902 ("Mertens"). The Office Action states that while Mertens does not explicitly disclose a second supply system to supply a gaseous substance, it would have been obvious that the heat source will create a gaseous substance. (Office Action, page 4). Claim 22 has been amended to clarify that the gaseous

substance is at least partially miscible with the liquid, and when mixed with the liquid, the mixture has a surface tension lower than the liquid, which inhibits the liquid from contacting the second part of the substrate. Accordingly, Applicants believe that the double patenting rejection of claim 22 is moot.

In light of the above, Applicants respectfully request withdrawal of the rejections under the judicially created doctrine of obviousness-type double patenting.

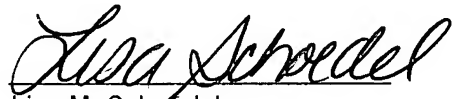
CONCLUSION

In light of the above amendment and remarks, Applicants submit that the present application is in condition for allowance and respectfully request notice to this effect. The Examiner is requested to contact Applicants' representative below if any questions arise or she may be of assistance to the Examiner.

Respectfully submitted,

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